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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,598	09/05/2003	David P. Davis	P1981R1P1	7980

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EXAMINER	
GODDARD, LAURA B	
ART UNIT	**PAPER NUMBER**
1642	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/656,598	DAVIS ET AL.	
	Examiner	Art Unit	
	Laura B. Goddard, Ph.D.	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-102* is/are pending in the application.

4a) Of the above claim(s) *1-94 and 97-102* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *95 and 96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/11/06, 9/28/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Election filed October 2, 2006 and January 4, 2007 in response to the Office Action of May 30, 2006 is acknowledged and has been entered. Applicants elected without traverse Group X (claims 95, 96, 98-100) and polynucleotide SEQ ID NO:1 that encodes SEQ ID NO:2. Applicants elected "oligonucleotides" from claims 98 and 99 as the molecule exposed to the sample.

As noted in the Restriction Requirement mailed May 30, 2006, on page 5, there is no antecedent basis for "oligonucleotide" for claims 98-100. Group X included claims 98-100 because they recited using an oligonucleotide for detection, a molecule that would detect a polynucleotide, as drawn to the elected invention. However, the claims were not amended to recite detection of a polynucleotide and are currently drawn to the detection of a polypeptide, of which could not be detected by using an oligonucleotide as claimed, hence the claims are withdrawn from further consideration with claims 1-94 97, 101, and 102 by the examiner under 35 CFR 1.142(b) as being drawn to non-elected inventions. Claims 95 and 96 are currently under prosecution.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 95 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 95 recites "a method of diagnosing the presence of a

tumor in a mammal, said method comprising **detecting the level of expression of a gene encoding a polypeptide ... wherein a higher level of expression of said polypeptide** in the test sample as compared to the control sample is indicative of the presence of tumor in the mammal from which the test sample was obtained". It is unclear if the expression level of the gene (mRNA expression) is being measured, or if the expression level of the polypeptide is being measured because the claim does not consistently refer one molecule that is being measured in diagnosing the presence of a tumor.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 95 and 96 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a WRITTEN DESCRIPTION rejection.

The claims are drawn to a method of diagnosing the presence of a tumor in a mammal, said method comprising detecting the level of expression of **a gene encoding a polypeptide having at least 80% amino acid sequence identity to** (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID

NO:1), in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of expression of said polypeptide [gene] in the test sample, as compared to the control sample, is indicative of the presence of tumor in the mammal from which the test sample was obtained (claim 95), wherein the step of detecting the level of expression of a gene encoding said polypeptide comprises employing an oligonucleotide in an *in situ* hybridization or RT-PCR analysis (claim 96).

The specification discloses the nucleotide sequence, SEQ ID NO:1, and the polypeptide sequence, SEQ ID NO:2, for TASK110, or "DNA255289" (p. 7, lines 30-33; Figs. 1 and 2). TASK110 gene was upregulated in expression in several cancers as compared to normal control tissues (Example 1, p. 84-86; Example 3, p. 88, line 40 through p. 89, line 7). The specification does not disclose any other genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), as broadly encompassed in the claims.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a recitation of

"genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1)". Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Although drawn to DNA arts, the findings in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997) and Enzo Biochem, Inc. V. Gen-Probe Inc. are relevant to the instant claims. The Federal Circuit addressed the application of the written description requirement to DNA-related inventions in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). The court stated that " [a] written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name', of the claimed subject matter sufficient to distinguish it from other materials. " Id. At 1567, 43 USPQ2d at 1405. The court also stated that:

> a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA" without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is.

Id. At 1568, 43 USPQ2d at 1406. The court concluded that "naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material." Id.

Finally, the court addressed the manner by which a genus of cDNAs might be described. "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus." Id.

The Federal Circuit has recently clarified that a DNA molecule can be adequately described without disclosing its complete structure. See Enzo Biochem, Inc. V. Gen-Probe Inc., 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002). The Enzo court adopted the standard that "the written description requirement can be met by show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics ....i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics." Id. At 1324, 63 USPQ2d at 1613 (emphasis omitted, bracketed material in original).

The inventions at issue in Lilly and Enzo were DNA constructs per se, the holdings of those cases are also applicable to claims such as those at issue here. A

disclosure that does not adequately describe a product itself logically cannot adequately describe a method of using that product.

Thus, the instant specification may provide an adequate written description of genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), per Lilly by structurally describing representative genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1) or by describing "structural features common to the members of the genus, which features constitute a substantial portion of the genus." Alternatively, per Enzo, the specification can show that the claimed invention is complete "by disclosure of sufficiently detailed, relevant identifying characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics."

In this case, the specification does not directly describe genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1) useful in the claimed invention in a manner that satisfies either the Lilly or Enzo standards. Although the specification discloses SEQ ID NO:1 and the encoded

polypeptide SEQ ID NO:2, this does not provide a description of the broadly claimed genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1) that would satisfy the standard set out in Enzo because the specification provides no functional characteristics coupled to structural features.

Further, the specification also fails to describe genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1) by the test set out in Lilly because the specification describes only SEQ ID NO:1 and the encoded polypeptide SEQ ID NO:2. Therefore it necessarily fails to describe a representative number of such species.

Thus, the specification does not provide an adequate written description of a genes encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1) that is required to practice the claimed invention. Since the specification fails to adequately describe the product to which the claimed method uses, it also fails to adequately describe the method.

4. Claims 95 and 96 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for **a method of diagnosing the presence of a malignant tumor in a mammal, said method comprising detecting the level of expression of (a) SEQ ID NO:1; or (b) a polynucleotide that encodes the polypeptide SEQ ID NO:2, in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of expression of (a) SEQ ID NO:1 or (b) a polynucleotide that encodes the polypeptide SEQ ID NO:2 in the test sample, as compared to the control sample, is indicative of the presence of malignant tumor in the mammal from which the test sample was obtained**, does not reasonably provide enablement for a method of diagnosing the presence of a tumor in a mammal, said method comprising detecting the level of expression of a gene encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of expression of said polypeptide [gene] in the test sample, as compared to the control sample, is indicative of the presence of tumor in the mammal from which the test sample was obtained. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988). The court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

The claims are drawn to a method of diagnosing the presence of **a tumor** in a mammal, said method comprising detecting the level of expression of **a gene encoding a polypeptide having at least 80% amino acid sequence identity to** (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of

expression of said polypeptide [gene] in the test sample, as compared to the control sample, is indicative of the presence of **tumor** in the mammal from which the test sample was obtained.

The claims are broadly drawn to diagnosing the presence of **any tumor** (benign, malignant, pre-cancerous, or cancerous cells and tissues) comprising detecting the level of expression of a gene encoding **any polypeptide** of unknown sequence and structure with 80% homology to SEQ ID NO:2 or encoding **any polypeptide** with 80% homology to **any polypeptide** encoded by a nucleotide sequence comprising SEQ ID NO:1.

The specification discloses that a "tumor" refers to "all neoplastic cell growth and proliferation, whether malignant or benign, and all precancerous and cancerous cells and tissues" (p. 22, lines 21-22). The specification discloses the nucleotide sequence, SEQ ID NO:1, and the polypeptide sequence, SEQ ID NO:2, for TASK110, or "DNA255289" (p. 7, lines 30-33; Figs. 1 and 2). TASK110 gene was upregulated in expression in several cancers as compared to normal control tissues (Example 1, p. 84-86; Example 3, p. 88, line 40 through p. 89, line 7) including breast, colon, lung, lymphoid, ovarian, pancreatic, colorectal, endometrial, melanoma, esophageal, and gastric cancers.

One cannot extrapolate the disclosure of the specification to the scope of the claims because the specification does not provide guidance or examples for diagnosing the presence of benign tumors or pre-cancerous tissues, as encompassed by the definition of "tumor" in the specification. The specification is enabling for diagnosing the

presence of a malignant tumor, including breast, colon, lung, lymphoid, ovarian, pancreatic, colorectal, endometrial, melanoma, esophageal, and gastric cancers (Example 1, p. 84-86; Example 3, p. 88, line 40 through p. 89, line 7), wherein the expression level of SEQ ID NO:1 was upregulated in malignant tissues compared to normal tissue controls. The specification does not provided a nexus between the upregulation of SEQ ID NO:1 or "TASK110" and the presence of benign tumors or pre-cancerous tissues. Further, the art teaches that upregulation of SEQ ID NO:1 is detected in malignant tissues, and does not provide a nexus between the upregulation of SEQ ID NO:1 and benign or pre-cancerous tissues. For example, US Patent 6,974,667, Horne et al, filed 6/14/2001, issued 12/13/2005, teaches upregulation of SEQ ID NO:1, identified as SEQ ID NO:1725, in liver cancer as compared to normal tissue (col. 2, lines 23-33; col. 3, lines 1-8; col. 6, lines 5-17; col. 14, lines 15-32; Example 5, Table 9A; see sequence search us-10-656-598-1.rni, issued patent database, result # 1). Horne et al identifies the known gene name of the polynucleotide as "KIAA0175" in Table 9A. US Patent Application Publication 2004/0005563 A1, Mack et al, filed 6/17/2002, published 1/8/2004 teaches SEQ ID NO:1, identified as KIAA0175 and as SEQ ID NO:126, is upregulated in ovarian cancer as compared to normal tissue (see Table 7A, p. 112; [0381], Table 13A, p. 159; see sequence search us-10-656-598-1.rnpbm, result # 7). Given the teaching of the art and the specification, one of skill in the art could not predictably diagnose the presence of *any* tumor comprising detecting SEQ ID NO:1 or a polynucleotide encoding polypeptide SEQ ID NO:1, unless the tumor was malignant.

One cannot extrapolate the disclosure of the specification to the scope of the claims because the specification does not provide guidance or examples for diagnosing the presence of a tumor based on the level of expression for a gene encoding **any polypeptide** with 80% sequence identity to SEQ ID NO:2 or **any polypeptide** with 80% sequence identity to a polypeptide encoded by SEQ ID NO:1. The specification does not provide a nexus between the diagnosis of the presence of a tumor and *any* gene encoding *any* polypeptide with 80% sequence identity to SEQ ID NO:2 or to *any* polypeptide encoded by a nucleotide comprising SEQ ID NO:1. The specification discloses the detection of upregulation of SEQ ID NO:1 in malignant tumor using RT-PCR and hybridization assays, and SEQ ID NO:1 encodes polypeptide SEQ ID NO:2. The art teaches the detection of upregulation of SEQ ID NO:1 in malignant tumors (see Horne et al and Mack et al above) and does not provide information on sequences encoding a polypeptide with 80% identity to SEQ ID NO:2 or to a polypeptide encoded by a nucleotide comprising SEQ ID NO:1. Those of skill in the art recognize that nucleotide changes and amino acid changes result in structurally and functionally different molecules, and the broad genus of polynucleotides encoding the broad genus of polypeptides would not predictably function in the diagnosis of a tumor as claimed. Bowie et al (Science, 1990, 247:1306-1310) teach that an amino acid sequence encodes a message that determines the shape of a protein and determines the ability of said protein to fold into unique three-dimensional structures that allows them to function. Bowie et al further teach that certain positions in the sequence are critical to the three dimensional structure/function relationship and these regions can tolerate only

conservative substitutions or no substitutions (p. 1306, cols 1 and 2). Clearly, the three dimensional structure of a protein is critical to its function, particularly relating to its function in diagnosis and tumorigenesis. However, neither the specification nor the art of record provide teachings that provide information about the polypeptide sequences which are 80% identical to SEQ ID NO:2 or nucleotides encoding said polypeptide sequences required for the method of diagnosing the presence of a tumor. This information appears to be critical because the art recognizes (see Bowie et al above) that it is the protein sequence that determines the three dimensional shape of a protein and suggests that the three-dimensional structure of the protein molecule may be essential for the protein's function and ability to be modulated. Thus, in the absence of guidance in the specification, the effects of the undefined polynucleotide sequences which encode undefined sequences that are 80% identical to SEQ ID NO:2 or to an amino acid encoded by a nucleotide comprising SEQ ID NO:1, cannot be predicted and one could not determine how to practice the claimed invention or predict which of the whole universe of broadly claimed nucleotides encoding the broad genus of polypeptides would function as claimed with a reasonable expectation of success.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 95 and 96 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,974,667, Horne et al, filed 6/14/2001, issued 12/13/2005.

The claims are drawn to a method of diagnosing the presence of a tumor in a mammal, said method comprising detecting the level of expression of a gene encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of expression of said polypeptide [gene] in the test sample, as compared to the control sample, is indicative of the presence of tumor in the mammal from which the test sample was obtained (claim 95), wherein the step of detecting the level of expression of a gene encoding said polypeptide comprises employing an oligonucleotide in an *in situ* hybridization or RT-PCR analysis (claim 96).

Horne et al teach upregulation of SEQ ID NO:1725 ("KIAA0175"), a polynucleotide with 100% identity to SEQ ID NO:1 of the instant application (see sequence search us-10-656-598-1.rni, issued patent database, result # 1) in liver cancer as compared to normal tissue and that this polynucleotide is a marker used for

the diagnosis of liver cancer (col. 2, lines 23-56; col. 3, lines 1-8; col. 6, lines 5-17; col. 14, lines 15-32; Example 5, Table 9A). Horne et al teach the detection of the expression level of SEQ ID NO:1725 by employing an oligonucleotide for RT-PCR or hybridization assays (col. 6, lines 6 through col. 11, line 25).

6. Claims 95 and 96 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication 2004/0005563 A1, Mack et al, filed 6/17/2002, published 1/8/2004.

The claims are drawn to a method of diagnosing the presence of a tumor in a mammal, said method comprising detecting the level of expression of a gene encoding a polypeptide having at least 80% amino acid sequence identity to (a) the amino acid sequence shown in Fig. 2 (SEQ ID NO:2); or (b) an amino acid sequence encoded by a nucleotide sequence comprising the nucleotide sequence shown in Fig. 1 (SEQ ID NO:1), in a test sample of tissue cells obtained from said mammal and in a control sample of known normal cells of the same tissue origin, wherein a higher level of expression of said polypeptide [gene] in the test sample, as compared to the control sample, is indicative of the presence of tumor in the mammal from which the test sample was obtained (claim 95), wherein the step of detecting the level of expression of a gene encoding said polypeptide comprises employing an oligonucleotide in an *in situ* hybridization or RT-PCR analysis (claim 96).

Mack et al teach a gene identified as "KIAA0175" (SEQ ID NO:126), that has 100% identity to SEQ ID NO:1 of the instant application (see sequence search us-10-656-598-1.rnpbm, result # 7) and is upregulated in ovarian cancer as compared to normal tissue. Mack et al teach that KIAA0175 can be used as a marker to diagnose ovarian cancer (see [0012-0019], [0021-0023], [0049], [0107], [0211-0213], Table 7A, p. 112; [0381], Table 13A, p. 159;). Mack et al teach the detection of the expression level of SEQ ID NO:1725 by employing an oligonucleotide for RT-PCR or hybridization assays ([0210-0215], [0221]).

7. **Conclusion:** No claims are allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura B. Goddard, Ph.D. whose telephone number is (571) 272-8788. The examiner can normally be reached on 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on 571-272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura B Goddard, Ph.D.
Examiner
Art Unit 1642

SHANON FOLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600